

MICHAEL J. THOMAS  Statistics Norway and University of Groningen

LARS DOMMERMUTH Statistics Norway*

Internal Migration and the Role of Intergenerational Family Ties and Life Events

Objective: This article examines how the migration behavior of older parents and adult children might be influenced by the geographical configuration of nonresident family networks and the emergence of “linked” life events.

Background: Researchers have long pointed to the importance of intrahousehold family events as triggers for migration, yet few have detailed how choices over whether, when, and where to migrate are formed with reference to significant others outside of the household.

Method: Utilizing geocoded register data for Norway, we identified intergenerational family networks comprising older parents (aged 55+) and their nonresident adult children living 20 km or more apart. We recorded the presence and location of various family ties, the occurrence of several life events, and analyzed their

association with the propensity and direction of migration using multinomial logistic regression.

Results: Approximately 40% of all recorded migration events (≥ 20 km) were directed toward familial locations (i.e., within 10 km of a parent/adult child). The attractiveness of familial locations was strengthened by the colocation of multiple family members and increased with the emergence of life events typically linked to increased support-needs (e.g., separation, widowhood, and childbirth). Beyond these general patterns, variations existed according to social class, immigrant background, and gender.

Conclusion: With the estimated coefficients for nonresident family ties appearing larger than many conventional predictors of migration, we call for far more attention to be paid to the links between kinship networks, care provision, and migration in contemporary society.

Statistics Norway, Research Department, P.O. Box 2633 St., Hanshaugen, 0033 Oslo, Norway and Population Research Centre, Faculty of Spatial Sciences, University of Groningen, P.O. Box 800 AV, Groningen, the Netherlands (michael.thomas@ssb.no).

*Statistics Norway, Research Department, P.O. Box 2633 St., Hanshaugen, 0033 Oslo, Norway.

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Key Words: family, family dynamics, intergenerational relationships, migration, parent–child relationships, support.

INTRODUCTION

Although rarely focused on migration per se, family sociologists in the United States and Europe have long explored the geographical configuration of nonresident family networks and the value that close geographical proximity can have in facilitating more frequent and better quality contact, care, and support exchange (e.g. Blaauboer, Mulder, & Zorlu, 2011; Bordone, 2009; Hank, 2007; Holmlund, Rainer, & Siedler, 2013; Lawton, Silverstein, & Bengtson, 1994; Mulder & van der Meer, 2009; White, 2004). Among the full constellation of family relations, ties between parents and children are often cited

as the most significant (Bengtson, 2001; Kolk, 2017; Silverstein & Bengtson, 1997), where they offer many possibilities for reciprocal intergenerational transfers of care and support (Lawton et al., 1994; Silverstein & Giarrusso, 2010). In general, the relationship between members of the two generations persists in its strength and supportive nature throughout life (Kaufman & Uhlenberg, 1998), though the value of access to intergenerational support systems may be heightened at certain junctures in the life course where events such as separation, widowhood, or the birth of a (grand)child can herald periods of particular care-related needs (Hank, 2007). As such, the work of family sociologists hints at important links between an individual's choice of location, the presence of intergenerational family ties, and the occurrence of certain life events.

The migration literature has been somewhat slower to recognize the role of nonresident family networks. This is despite a decade-long body of work demonstrating the "relational" nature of intrahousehold decision-making processes in migration (see Cooke, 2008). Although a dearth in suitably large-scale multiactor data has certainly not helped, the omission of family networks speaks to the broader practice of individualism and economism within migration research. Indeed, drawing on the cost-benefit models of neoclassical economists of the 1960s and 1970s, for example, Harris & Todaro, 1970; Sjaastad, 1962), contemporary researchers still very often conceive of migrants as atomistic actors primarily responding to net economic costs and returns (e.g. prospective wages or ongoing employment). This is despite the fact that Sjaastad's (1962: 84) original work was unequivocal in emphasizing what he termed the nonmonetary "psychic" costs to migration, of which family ties and a reluctance to leave familiar places were presumed central.

Although less economically deterministic, many scholars purporting to employ life course approaches to migration have similarly ignored the array of ways in which lives are bound to wider networks of relationship and connection, with most studies restricted to a focus on the timing, occurrence, and interaction of events within the individual's life or, at most, among the members of the same household. Such restrictions are unfortunate as they ignore one of the most appealing aspects of the original framework—the "linked lives" perspective

(Elder, 1994). Referring to the way in which individual life courses are embedded within networks of social relationships, the linked lives perspective helps to inform us of the ways in which ties to significant others *outside* of the household can shape individual decisions on whether, when, and where to relocate (Coulter, Van Ham, & Findlay, 2016).

To date, only a handful of empirical studies have emerged to offer some understanding of the role of wider family networks, with nonresident family appearing to act as a *deterrent* to migration (see Ermisch & Mulder, 2018; Mulder & Malmberg, 2011; Mulder & Malmberg, 2014), reducing the likelihood of migration when located nearby, and as an *attraction factor* (see Michielin, Mulder, & Zorlu, 2008; Pettersson & Malmberg, 2009; Smits, 2010), increasing the likelihood of migration toward their location as compared to locations elsewhere. The importance of nonresident family has been further supported by the findings of recent studies of self-reported motives for migrating. Using data for the United Kingdom, Australia, and Sweden, Thomas, Gillespie, and Lomax (2019) found family-related factors to be just as important as a primary motive for migrating as employment or educational concerns, while a more detailed study of the United Kingdom revealed desires to live closer to nonresident family/friends to be the most frequently cited family-related sub motive (Thomas, 2019).

Using uniquely detailed geocoded population register data for Norway, and focusing on parents (aged 55+) and adult children (aged 18+) who live 20 km or more apart, this study provides a number of novel insights underscoring the importance of nonresident family networks for migration. As a clear demonstration of the limitations to individual and household-centric approaches, we reveal how approximately 40% of all recorded migration events are directed toward locations within 10 km of a nonresident family member. Moving beyond simple parent-child dyads to incorporate the presence and location of several family members, we demonstrate how for both generations the geographical clustering of multiple family members works to reinforce the strength of family ties, both as a deterrent to migration and as an attraction factor.

In support of expectations from the linked lives perspective and insights from family sociology, migration toward family is shown to be

especially important at certain junctures in the life course, when needs are acute or resources are low. Life events such as separation, widowhood, and childbirth are all associated with considerable increases in the likelihood of migrating toward family. Meanwhile, accounting for additional sources of sociodemographic variation, we find separated women from both generations to be more likely to migrate toward family than otherwise equivalent men, while second-generation immigrants are found to have higher propensities to migrate back into the parental home than those with parents of Norwegian heritage.

With the estimated coefficients for nonresident family ties appearing larger than many conventional socioeconomic predictors of migration (e.g., income, education, and occupational status), we call for far more attention to be paid to the links between kinship networks, care provision, and migration. Such studies could prove vital as we contend with how best to balance formal and informal provisions of care and support, especially in the face of widening social inequalities, population aging, and welfare state retrenchment.

BACKGROUND AND HYPOTHESES

The Role of Nonresident Family Ties and Life Events

Harnessing Elder's (1994) notion of "linked lives," Coulter et al. (2016) have called for residential relocation to be seen not as the discrete life-course transition we usually observe in quantitative studies, but rather as a "relational" practice expressed by individuals operating in networks of shared social bonds, obligations, and support exchange. Although most studies of migration have been slow to engage with this perspective, in-depth qualitative research in England (Mason, 2004) and Sweden (Hjälmsjö, 2014) does point to the significance of such factors, with accounts revealing the persistent centrality of kinship networks, reciprocal care exchange, and interwoven life histories for determining why and when people choose to move to, or stay in, particular locations. Recognizing that lives are lived interdependently, within networks of shared relationships and support exchange, we expect migration toward family to represent a nontrivial share of all observed migration events, though a precise definition of what constitutes

a nontrivial share is hard to discern and so a testable hypothesis is not formed.

A testable hypothesis on the role of family as an attraction factor can be formed with reference to the effect of having multiple family members located at a destination. Given the opportunity for greater interaction between multiple family members, as well as the possibility to share out familial responsibilities of care/support where necessary (Michielin et al., 2008), the attractiveness of a familial location as a destination for migration should be stronger when there are additional family members (e.g., adult children's siblings or older parents' children) clustered together (Hypothesis 1).

As an important component of Sjaastad's (1962) "psychic costs," local family ties have long been thought to act as a deterrent to migration. Indeed, linked to improved opportunities for better contact, care, and support exchange, the presence of local family can be thought to reflect an important source of location-specific insider advantages (Fischer, Holm, Malmberg, & Straubhaar, 2000); non-transferable local assets that come to represent "sunken costs" would be lost in the context of any subsequent residential relocation (Fischer & Malmberg, 2001). Thus, in line with the few previous studies that have accounted for such factors (Ermisch & Mulder, 2018; Mulder & Malmberg, 2011, 2014), we expect the overall propensity to migrate for older parents and adult children to be lower when one or more family members are located nearby (Hypothesis 2).

Beyond the foundational premises described in Hypotheses 1 and 2, previous research into kinship networks and care exchange suggests a requirement to be sensitive to the ways in which needs and preferences for familial proximity vary across the life course. With coresident partners often being key sources of social, emotional, and instrumental support (Gierveld, van Groenou, Hoogendoorn, & Smit, 2009), the loss of a partner can coincide with serious declines in well-being, both emotional and material. For older parents, access to wider networks of informal familial support can be particularly pressing in the aftermath of separation and widowhood events, where the risk of loneliness is considerably increased (Dykstra, 1993; Victor, Scambler, Shah, & Cook, 2002). For adult children, separation has been associated with moves toward parents as well as increased risks of returning to the parental home, which can represent a useful

Table 1. *Summary of Primary Hypotheses Relating to Family Ties and Life Events in Migration*

The geographical configuration of nonresident family	
H1	The clustering of multiple family members will increase the propensity for older parents and adult children to migrate to that location.
H2	The propensity to migrate for older parents and adult children will be lower when one or more family members are located nearby.
The role of “linked” life events	
H3a	The loss of a partner for older parents will increase their propensity to migrate towards the adult child.
H3b	The loss of a partner for the adult child will increase their propensity to migrate towards, or into co-residence with, the older parent.
H4	The birth of a (grand)child will increase the propensity for adult children to migrate to the older parent.

source of emergency housing in times of need (Albertini, Gähler, & Härkönen, 2018; Stone, Berrington, & Falkingham, 2014). We thus draw our third hypothesis: For older parents, the loss of a partner should increase the propensity to migrate toward the adult child (Hypothesis 3a), while for the adult child it should increase the propensity to migrate toward, or into coresidence with, the older parent (Hypothesis 3b).

Familial support-needs and the attractiveness of intergenerational proximity are also likely to be increased in the context of the birth of new (grand)children. For new parents, proximity to the child’s grandparents can prove useful in facilitating regular access to cost-free and reliable childcare, while at the same time allowing grandparents to enjoy greater opportunities for more intensive grandparent–grandchild interaction (Compton & Pollak, 2014; Silverstein & Giarrusso, 2010). Although often not a daily source of care provision, this supplemental role remains important even in countries with high availability of public childcare, such as Norway (Herlofson & Hagestad, 2012). Fitting with previous research (Michielin et al., 2008; Smits, 2010), we expect childbirth events to coincide with higher propensities for adult children to migrate toward their parent(s) (Hypothesis 4).

A sense of obligation within intergenerational family networks might be expected to trigger some into migration in order to provide care and support to family members in particular times of need. Mason’s (2004) study of migration histories presents multiple accounts of the ways in which people carefully consider, for instance, the needs of elderly parents. Here, several strategies of response to care needs were observed, from children moving to (or even into coresidence with) their parents, to arranging for the parent to move to a more suitable location, right

through to attempts to persuade other members of the family to increase their contributions toward care (Mason, 2004, p. 168). Analyses of Dutch register data have also suggested that the presence of young grandchildren can increase the propensity for grandparents to move closer to the adult child (Smits, 2010), while parental separation has been found to increase the propensity for adult children to move into coresidence with the separated parent (Smits, van Gaalen, & Mulder, 2010). With that said, we expect the impact of life events such as childbirth, separation, or widowhood to be far more important for the migration behavior of those who directly experience them than for related others. A summary of the hypotheses to be tested is provided in Table 1.

Additional Sources of Heterogeneity

Several additional sources of heterogeneity can be expected to influence both the propensity to migrate and the relative significance that family plays in that decision. With lower incomes and access to fewer resources often signaling greater support-needs, it is perhaps unsurprising to find previous studies demonstrating an association between limited material resources and closer familial proximity, lower propensities to move away, and higher propensities to move toward family (Dawkins, 2006; Silverstein, 1995). Yet, more generally, we know that migration is strongly selective according to socioeconomic status, with longer-distance migration more common among those with higher incomes and higher levels of education (Thomas, Stillwell, & Gould, 2015). As such, those with few resources might stand to gain the most from migrating toward family and yet be the least likely to undertake such moves.

Beyond education and income-based resources, scholars of international migration have emphasized how ties among networks of (former) migrants, including family, can prove critical as sources of important information, support, and social capital (Massey et al., 1993). Interestingly, after accounting for socioeconomic differences, a rare study of immigrants in Amsterdam revealed proximity to kin to be more important in influencing the (im)mobility behaviors of certain non-Western populations and their descendants than Dutch natives and their descendants (Zorlu, 2009). Differences according to gender might also be expected, with previous research from the United States showing mothers to receive more support and have more frequent and better quality relations with their children than fathers (Grigoryeva, 2017; Rossi & Rossi, 1990; Spitze & Logan, 1990). These differences tend to manifest most clearly in the aftermath of separation and divorce, with nonresident mothers found to live closer to their children than nonresident fathers (Dommermuth, 2018; Thomas, Mulder, & Cooke, 2017) and, later in the life course, older mothers tending to receive more support from their children than older fathers (Dykstra, 1997; Kaufman & Uhlenberg, 1998). With that said, among the younger generation, research from the United Kingdom has shown separated men to be more likely to return to the parental home than separated women (Stone et al., 2014).

In addition to individual and family-level factors, the desire and ability to seek or maintain familial proximity is likely to vary geographically (Thomas et al., 2017). For instance, family located in urban areas, with access to better infrastructure and more diversity in employment, education, housing, leisure, health, and public care provision, should experience fewer locational trade-offs than those in less well-serviced, more sparsely populated, rural locations (van der Pers, Mulder, & Steverink, 2014). Among older parents, access to formal health and social services can be a particularly important factor influencing migration behavior (Evandrou, Falkingham, & Green, 2010); meanwhile among adult children, concerns over access to dynamic labor markets and urban amenities might reduce the attractiveness of migration toward family located in rural areas.

A further geographical consideration relates to the potential for correlations to exist between the location and attractiveness of family and

the location and attractiveness of otherwise “familiar locations,” that is, the patterns we associate with family ties might be the product of broader place-based attachments to locations in which a person grew up. Indeed, one might argue that factors such as accumulated senses of local belonging, familiarity, knowledge of local labor and housing markets, matter more than concerns over proximity and access to family. With the influence of family and familiarity often coinciding, recent work by Zorlu and Kooiman (2019) proves useful in revealing how decisions to migrate back to the home region are very much contingent on the presence of family, with return migration far less likely if family no longer lives there. Sensitivity tests designed to assess the independence of the estimated effects of family ties are discussed in Section 3.

The Norwegian Context

Beyond the fact that Norwegian register data are ideally suited to the high demands of detailed analysis into nonresident family networks, life events, and internal migration, the country’s highly developed welfare arrangements make it a particularly interesting context for study. As an affluent country with strong formal care services, dependency on informal forms of intergenerational familial support is lower than in many other national contexts, including those in other parts of Northern and Western Europe. Researchers have selected Norway as an example of a country with relatively weak family ties (Alesina & Giuliano, 2011), while contact with family in Scandinavian contexts has been shown to depend less strongly on geographical proximity than in Southern Europe (Hank, 2007).

As a highly egalitarian country, in terms of educational and economic opportunities, the observation of appreciable variations according to differences across socioeconomic strata could be expected to be relatively subdued. Norway boasts particularly strong female labor–market participation (though a substantial share, 38% in 2016, work part-time), paid parental leave if parents were previously employed (10–12 months with specific quotas for mothers and fathers), and subsidized high-quality childcare helping new parents to maintain their attachments to the workplace (Løken, Lommerud, & Lundberg, 2013). The characteristics of the Norwegian welfare system and labor market might

thus be expected to limit dependency on care services traditionally offered by (female) family members (Konrad & Lommerud, 1995); Løken et al., 2013), and therefore the relative strength of nonresident family ties and the likelihood of any socioeconomic or gender-based differences existing therein. Yet, regardless of a reduced dependency on family, the “crowding out” of family help does not necessarily follow from pervasive state provision, with affective and instrumental support remaining important even in the welfare settings of Scandinavia (Daatland & Lowenstein, 2005).

DATA AND METHODS

Norwegian Register Data

The analysis that follows was based on administrative population register data from Norway. Each resident in Norway is assigned to a personal and unique ID number, which makes it possible to link information from different administrative registers at the level of the individual. The Central Population Register includes demographic information such as date of birth and death, sex, civil status, country of birth, date of immigration, and nationality. Because the ID numbers of parents are also registered, Statistics Norway has established data sets on family relations, identifying family bonds between persons with an ID number (such as children, siblings, parents, and grandparents).

Based on the Ground Parcel, Address, and Building Register as well as the Central Coordinating Register for Legal Entities, registered individuals can be assigned to addresses and dwellings. Each house, row house or dwelling in a block, has a unique address number and is connected to exact geographical coordinates. This is used to provide information on family and household characteristics (Statistics Norway, 2019a) and register-based housing conditions (Statistics Norway, 2019b). The unique addresses and geographical coordinates allowed us to identify exact migration distances as well as exact distances between the registered dwellings of nonresident family members. The main quality problem of the household and housing statistics is the incomplete registration of dwelling numbers for persons living in multidwelling houses. However, in recent years, the data quality has improved substantially (in the beginning of 2012, only 4% of the population

did not have a unique address). To observe the effect of key demographic events and transitions, we combined register data for all persons alive and resident between January 1, 2015, (t_0) and January 1, 2016 (t_1).

Conceptually, internal migration differs from residential mobility in necessitating a change in “daily activity space” (Roseman, 1971)—the general area of the weekly movement cycle. Acknowledging that the distance at which a change in daily activities occurs is inherently subjective, we chose to define a change in address as a migration if the distance between the former and new address was at least 20 km. A distance of 20 km corresponds to an average travel time of between 30 and 50 minutes by car in Norway. Sensitivity tests on distance thresholds of 30 and 40 km produced similar results, though as migration propensities decline with distance, we observed a drop off in the number of migration events available for analysis.

From the full population, we identified intergenerational family networks comprising older parents (aged 55+) and nonresident adult children (aged 18+) who are living ≥ 20 km apart on January 1, 2015 (t_0). Selecting this sample makes it possible to examine migration toward family, but also means we omit families where no members live far apart. For the focus of our analysis, the most likely effect of this selection is that we underplay the strength of family ties as a deterrent to migration, with familial proximity presumably more important among families that never move far apart. Indeed, compared with equivalent older male and female parent samples without the distance threshold (Appendix A), our analytical samples have lower shares of older parents with adult children living nearby, as well as lower shares of adult children with siblings living nearby (see Table 3). Adult children in the analytical samples also tend to have higher educational attainment, slightly higher employment rates, and marginally shorter durations of residence than those in the unconditional samples in Appendix A. Along with a range of other socioeconomic and demographic characteristics described earlier, our models were adjusted to account for such sample distributions.

Selecting only older parents (aged 55+) enabled us to clearly separate the generations of adult children and parents and thus avoid double counting (i.e., including the same person twice, as both an adult child and as a parent). Selecting older parents also increased the likelihood that

Table 2. Category Frequencies for Dependent Variable (Data in Long Form)

Outcome	Male parent sample		Female parent sample	
	Frequency	% share	Frequency	% share
(1) Neither migrate	314,122	93.33	280,410	93.82
(2) Migration parent to child	1,210	0.36	1,356	0.45
(3) Migration child to parent	4,636	1.38	3,884	1.30
(4) Migration child into co-residence with parent	3,170	0.94	2,658	0.89
(5) Parent migrates elsewhere	2,707	0.80	2,154	0.72
(6) Child migrates elsewhere	10,739	3.19	8,408	2.81
	336,584	100.00	298,870	100.00

their children were of adult age (and thus at risk of migrating themselves). Drawing a sample from an older population also meant we were better placed to detect the role of grandchildren and the effects of widowhood.

To provide a comparable starting point from which to observe the influence of life events like separation and widowhood on older parents' migration, we selected only older parents in two-sex coresidential partnerships, before splitting our sample into older male and older female subsamples to account for the possibility of gender variations therein. Stratifying the sample by parents' gender had the additional benefit of avoiding double counting and correlations in outcomes between partners. From here, our data were transformed into long form such that multiple adult children were nested within their older (male/female) parent. Our final gender-stratified samples consisted of (a) 336,584 adult children nested within 216,611 older male parents and (b) 298,870 adult children nested within 195,482 older female parents. The lower frequency of older female parents relates to our selection of individuals aged 55+ in coresidential partnerships. This selection criterion removed partners below the age of 55 and where men are more likely to have younger partners than women, we see a disproportionate number of women removed.

Although the use of an observation period of a single year naturally reduces the number of observable migration events, taking a brief "snapshot" of data meant we could be more confident when inferring links between the observed life events and the migration outcome. Given that most adult children were observed in both samples, and that virtually all older female parents had a partner in the older male parent sample, an analysis of both samples produced very

similar results. We present the estimated coefficients for family ties and life events from the larger male parent analytical sample but refer to differences in the female parent analytical sample analysis where they emerged—namely, after separation and widowhood.

The Dependent Variable

With the data structured in long form, we derived a six-category dependent variable, which compared the changes in the relative location of the adult child and parent between January 1, 2015 (t_0) and January 1, 2016 (t_1). The frequencies and percentage shares for the final six-category outcome variable are shown in Table 2, with the categories defined as follows:

- (1) Neither migrate ≥ 20 km and parent-child proximity still ≥ 10 km
- (2) Parent migrates ≥ 20 km and parent-child proximity is reduced to <10 km
- (3) Child migrates ≥ 20 km and parent-child proximity is reduced to <10 km
- (4) Child migrates ≥ 20 km and moves in with parent
- (5) Parent migrates ≥ 20 km and parent-child proximity is still ≥ 10 km
- (6) Child migrates ≥ 20 km and parent-child proximity is still ≥ 10 km

It should be noted that we originally had a 10-category-dependent variable, but because of the concerns over sparsity in the model, we subsumed three particularly rare occurrences into their closest alternative. For the older male parent sample, a total of 173 cases where the "parent migrates to move in with child" or where "both migrate together" were coded as "(2) Migration parent to child." For the older female parent sample, the equivalent number of cases was

174. This represented 14% of the “(2) Migration parent to child” category for the male parent sample, while for the female parent sample it represented 13%. A further 171 cases where “both migrate elsewhere” in the male parent sample were recoded as “(5) Parent migrates elsewhere” ($\approx 6\%$ of this category), with 121 equivalent cases recoded in the female parent sample ($\approx 6\%$ of the category). Finally, in the male parent sample, we subsumed the 209 cases of “short distance moves (<20 km) resulting in close proximity (<10 km)” into the “(1) Neither Migrate” category, doing the same for the 185 cases in the female parent sample. Preliminary models excluding the rare outcomes from our analysis (rather than subsuming them) produced very similar results to those presented later (see Appendix C).

Measuring Family Ties and Life Events

To address Hypotheses 1 and 2, we accounted for the presence and location of additional members of the family network. For older parents, we recorded whether they are living with or nearby other (adult) children (<10 km). A distance of around 10 km has been used in previous work to signify the distance after which face-to-face contact and support become difficult (Knijn & Liefbroer, 2006; Zhang, Engelman, & Agree, 2013). For adult children, we recorded the presence and age of any coresident children as well as whether they had siblings (i.e., the parent’s other adult children) living within a 10 km radius. To test Hypotheses 3a and 3b, we recorded separation and widowhood events between t_0 and t_1 . There were too few cases in which newly separated/widowed older parents had formed a new coresidential partnership and so we do not account for it in our models. For adult children, we recorded the following partnership transitions: continuing partnership; continuing single; separation/widowed followed by a new partnership; separation/widowed followed by no new partnership; and from single to partnership. To test Hypothesis 4, we recorded whether a (grand)child was born between t_0 and t_1 .

Accounting for Additional Characteristics

We accounted for the gender of the adult child where the gender of the older parent was naturally accounted for in the stratification of our analytical sample. The ages of older parents

and adult children were recorded and centered at their mean values (67 and 39, respectively). Beyond this, we accounted for whether the parent had an immigrant background, with no Norwegian parentage, which in turn provided a measure of the second-generation immigrant status of adult children. Immigrants who had at least one Norwegian parent were treated the same as those who were born in Norway.

In terms of socioeconomic characteristics, we utilized data from the National Education Database (Statistics Norway, 2017a) to classify the highest level of education, and from the Tax Registers, to calculate household incomes (Statistics Norway, 2017b)—the latter being measured on the interquartile range for the full population of households in 2015. Based on the Tax Register and records on social transfers, we distinguished between employed persons, social welfare recipients, and retired persons and “others.” Employed persons also included the self-employed, where their annual work income was above the eligibility for general social welfare. The second group included recipients of old age pensions, early retirement, disability pensions, and general social welfare. “Others” included persons that cannot be subsumed in the first two groups, such as homemakers. For adult children, we also identified students.

Housing tenure was used to describe the household dwelling ownership status. Owners included freeholders, co-ownership (typical for row houses), and homeowners through common-hold associations or condominium, which is typical for apartments in housing blocks. The household owns the house or the dwelling if at least one of the residents is registered as owning the property. The householders are tenants when none of the residents was registered as an owner. As a background measure of attachment to place, we calculated the duration of residence at the current address for all parents and adult children using the date of the last registered move within the country or date of immigration to Norway. We again centered these variables at their mean values.

Finally, we employed a measure of municipal centrality as a proxy for broader geographical differences in such things as access to infrastructure and the relative ease of family connectivity; formal health and care provision; and diversity in labor market, housing, and educational opportunities. Centrality describes the geographic location of a municipality in relation

to urban settlements of various sizes. The urban settlements were divided into two levels according to population and available public services. For both older parents and adult children, we distinguished between urban and central municipalities on the one hand, and rural and less central municipalities on the other. Rural and less central municipalities have up to 15,000 inhabitants and are not within a commuting distance to a regional center, estimated at 2.5 hours (3 hours for Oslo) or above. The summary statistics for the independent variables could be found in Table 3.

We used multinomial logistic regression models, dealing with the nesting of multiple adult children within the same older parent via the use of cluster robust standard errors at the level of the older parent. The estimated multinomial logistic regression coefficients for the male parent sample are given in Table 4, while the equivalent estimates for the female parent sample could be found in Appendix B. To test if our multinomial model results were robust to independence of irrelevant alternatives (IIA) assumptions, we reran the models excluding one outcome at a time, this allowed us to check how effects on the log odds are redistributed when one outcome is no longer available. The effects of redistribution on our estimated coefficients did not change our substantive findings and interpretations (see Appendix D).

As noted earlier, ties to family might often coincide with ties to one's place of birth, making the observation of the independent effects of family networks difficult. Consequently, we replicated our analysis on two smaller samples, first selecting only those adult children who no longer lived in their municipality of birth and, second, selecting only those adult children whose parents no longer lived in the adult child's municipality of birth. We were not able to include parent's place of birth (or any adult children aged 47 years or older in 2015) as records of municipality of birth start in 1968. After removing the potentially confounding effects of attachments to the place of birth, and despite the reduced precision in estimates stemming from the smaller sample size, the estimated independent effects of local family ties and life events remained reassuringly close in strength and direction to those based on the full analytical sample (see Appendix E).

An alternative robustness test involved the use of placebo groups, wherein we matched

adult children in our analytical samples to older parents in our sample who were unrelated but had the exact same characteristics as their real parent on all independent variables. Based on geo-coordinates, distances between all child-parent matches were then recalculated and we excluded matches who lived within the 20 km threshold. After dropping parents outside of the 20 km distance threshold, 1.9% of adult children in the male parent sample and 2.7% of adult children in the female parent sample did not have an exact match and were therefore removed from this sensitivity test. In cases where there were multiple remaining placebo matches for an adult child, we randomly selected one as the final "placebo parent." In removing the family link while keeping the relative characteristics and conditions the same, we were able to assess the extent to which moving toward family was a chance occurrence, resulting from the simple fact that people with certain characteristics are more likely relocate and, when they do, to relocate toward certain types of areas composed of people with certain characteristics. As can be seen in Appendix F, when adult children were matched to their real parent, approximately 40% of all migration events (in both male and female parent samples) were directed toward family, whereas in the placebo data approximately 2% of migration events appeared as moves toward randomly allocated placebo "family" (98% of migration events were directed elsewhere). Based on this, we feel reassured that the insights we offer below are based on real associations, as opposed to spurious chance occurrences.

ANALYSIS

The frequencies in Table 2 show that approximately 7% of cases in both male and female parent samples had experienced some form of migration ≥ 20 km. With migration propensities in Norway known to decline sharply with age (Dommermuth & Klüsener, 2018), we observe higher migration propensities among adult children as compared to their older parents. Based on our population of older parents and adult children living 20 km or more apart, the descriptives demonstrate the clear relevance of familial locations as destinations for migration. Indeed, migration directed toward family members represented

Table 3. Summary Statistics (Means) for Independent Variables

Parent characteristics			Adult child characteristics		
	Male parent sample	Female parent sample		Male parent sample	Female parent sample
Living with or nearby adult child			Adult sibling nearby		
No	47.45	47.28	No	79.82	81.33
Yes	52.55	52.72	Yes	20.18	18.67
Partnership transition			Age of youngest resident child		
Continuing partnership	98.26	97.32	No child	48.02	46.48
Separated	1.08	0.94	0–6 years	31.56	31.82
Widowed	0.66	1.74	6–17 years	20.42	21.70
Age (years)	67.81	66.56	Partnership transition		
Immigrant status			Continuing partnership	66.20	68.90
Born in Norway, or has Norwegian parentage	96.41	96.23	Continuing single	24.32	22.58
Immigrant, no Norwegian parentage	3.59	3.77	Sep/widowed, new partner	1.16	1.02
Educational attainment			Sep/widowed, no partner	3.69	3.38
Up to secondary education	67.56	70.54	Single, new partner	4.63	4.11
Tertiary education or above	32.44	29.46	Birth event		
Household income			No	93.92	94.09
Below 25%	9.94	12.04	Yes	6.08	5.91
Middle 50%	66.93	67.57	Age (years)	38.62	39.81
Above 75%	23.13	20.39	Gender		
Occupational status			Male	48.34	48.53
Employed	40.34	34.07	Female	51.66	51.47
Retired or social security receiver	56.95	59.64	Educational attainment		
Other	2.72	6.28	Up to secondary education	42.69	40.89
Housing tenure			Tertiary education or above	57.31	59.11
Owner	94.39	94.38	Household income		
Renter	5.61	5.62	Below 25%	18.92	17.19
Duration of residence (years)	23.88	24.89	Middle 50%	50.22	49.97
Municipality centrality			Above 75%	30.85	32.84
Urban or central	75.26	74.06	Occupational status		
Rural or less central	24.74	25.94	Employed	80.66	82.67
			Social security receiver	8.28	8.02
			Student	3.94	2.83
			Other	7.11	6.49
			Housing tenure		
			Owner	82.33	84.16
			Renter	17.67	15.84
			Duration of residence (years)	6.58	6.92
			Municipality centrality		
			Urban or central	88.78	88.66
			Rural or less central	11.22	11.34

Note. Frequencies refer to data in long form with multiple adult children nested within their older parent. Male parent sample $n = 336,584$, female parent sample $n = 298,870$.

39.7 and 42.8% of all observed migration events in the male and female parent samples respectively. It is important to note that this sizable share does not consider moves toward

aunts, uncles, cousins, older parents' siblings, or other nonbiological family-related relocations, for example, those aimed at increasing the proximity to parents-in-law or step-children.

Table 4. Multinomial Logistic Regression Model of Migration Propensities (Coefficients Relative to “Neither Migrate”): Male Older Parents

	Migration parent to child		Migration child to parent		Migration child into co-residence with parent		Parent migrates elsewhere		Child migrates elsewhere	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Constant	-6.59	0.14	-5.04	0.06	-8.53	0.13	-5.48	0.10	-4.02	0.05
Parent’ family ties										
Living with or nearby adult child (ref: No)										
Yes	-0.97	0.09	0.53	0.03	0.25	0.04	-0.78	0.06	-0.12	0.02
Adult child’s family ties										
Adult sibling nearby (ref: No)										
Yes	1.11	0.08	-0.44	0.05	-0.65	0.06	0.00	0.07	-0.46	0.03
Age of youngest resident child (ref: No children)										
0–6	0.48	0.08	0.21	0.04	-0.21	0.07	0.02	0.06	-0.20	0.03
6–17	0.22	0.09	-0.60	0.07	-0.95	0.12	0.06	0.06	-0.73	0.05
Parent’s family events										
Partnership transition (ref: Continuing partnership)										
Separated	2.94	0.14	0.33	0.13	-0.10	0.23	2.94	0.10	0.23	0.09
Widowed	1.92	0.26	0.11	0.24	1.05	0.34	1.43	0.24	0.21	0.14
Adult child’s family events										
Partnership transition (ref: Continuing partnership)										
Continuing single	0.10	0.12	<u>0.25</u>	<u>0.06</u>	3.01	0.10	0.08	0.08	<u>0.17</u>	<u>0.04</u>
Sep/widow, new partner	0.13	0.40	0.94	0.12	<u>1.34</u>	<u>0.28</u>	0.21	0.23	1.17	0.08
Sep/widow, no partner	0.30	0.23	1.25	0.08	4.12	0.11	0.25	0.14	1.15	0.05
Single, new partner	0.09	0.21	0.94	0.07	1.34	0.16	0.36	0.12	1.30	0.05
Birth event (ref: No)										
Yes	-0.07	0.12	0.47	0.05	-0.09	0.12	-0.05	0.09	0.22	0.04
Parent’s characteristics										
Age—67	0.01	0.01	0.01	0.00	0.00	0.01	<u>-0.03</u>	<u>0.01</u>	0.00	0.00
Immigrant status (ref: Born in Norway or has Norwegian parentage)										
Immigrant, no Norwegian parentage	0.58	0.15	0.00	0.07	0.75	0.08	0.14	0.14	<u>-0.22</u>	<u>0.05</u>
Educational attainment (ref: Up to secondary education)										
Tertiary education or above	0.06	0.08	0.00	0.03	-0.11	0.04	<u>0.27</u>	<u>0.07</u>	0.03	0.02
Household income (ref: Middle 50%)										
Above 75%	<u>0.45</u>	<u>0.11</u>	0.10	0.04	0.84	0.05	0.12	0.08	-0.02	0.03
Below 25%	-0.17	0.14	0.09	0.07	-0.99	0.15	-0.11	0.11	0.13	0.04
Occupational status (ref: Employed)										
Other	0.42	0.22	-0.37	0.10	0.39	0.11	0.34	0.16	-0.04	0.06
Retired or social security receiver	0.43	0.11	-0.11	0.04	0.39	0.06	0.48	0.08	-0.03	0.03
Housing tenure (ref: Owner)										
Renter	0.66	0.13	0.03	0.07	0.21	0.10	0.99	0.09	0.14	0.04
Municipality centrality (ref: Urban or central)										
Rural or less central	-0.14	0.10	-0.49	0.04	-0.17	0.05	0.13	0.07	0.01	0.02
Duration of residence—24	-0.03	0.00	0.00	0.00	0.02	0.00	-0.04	0.00	-0.01	0.00
Adult child’s characteristics										
Gender (ref: Male)										
Female	0.04	0.07	-0.17	0.04	-0.37	0.13	-0.05	0.05	-0.29	0.03
Age 39	-0.01	0.01	-0.04	0.00	-0.08	0.00	0.00	0.00	-0.03	0.00
Educational attainment (ref: Up to secondary education)										
Tertiary education or above	-0.05	0.07	<u>0.16</u>	<u>0.03</u>	0.00	0.05	0.04	0.05	0.15	0.02

Table 4. *Continued*

	Migration parent to child		Migration child to parent		Migration child into co-residence with parent		Parent migrates elsewhere		Child migrates elsewhere	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Household income (ref: Middle 50%)										
Above 75%	0.10	0.07	-0.12	0.04	1.79	0.05	-0.07	0.05	-0.01	0.03
Below 25%	-0.22	0.11	<u>-0.20</u>	<u>0.05</u>	-1.87	0.06	-0.11	0.07	-0.02	0.03
Occupational status (ref: Employed)										
Other	0.11	0.11	0.35	0.05	1.60	0.07	0.12	0.07	0.37	0.04
Social security receiver	0.01	0.11	0.37	0.06	1.07	0.08	0.04	0.07	0.32	0.04
Student	-0.19	0.18	0.05	0.06	1.73	0.07	0.05	0.10	0.14	0.04
Housing tenure (ref: Owner)										
Renter	-0.11	0.10	0.52	0.04	0.92	0.05	0.12	0.06	0.57	0.03
Municipality centrality (ref: Urban or central)										
Rural or less central	0.07	0.13	<u>0.21</u>	<u>0.05</u>	0.24	0.07	0.07	0.07	0.48	0.03
Duration of residence—7	0.00	0.01	-0.05	0.00	-0.10	0.01	-0.01	0.00	-0.05	0.00
Interaction terms										
Adult child partnership transition and gender										
Continuing single * female	-0.02	0.14	0.12	0.07	0.22	0.14	-0.06	0.09	0.38	0.05
Sep/widow, new partner * female	-0.03	0.57	0.31	0.17	0.68	0.35	-0.15	0.36	0.43	0.11
Sep/widow, no partner * female	-0.63	0.37	0.56	0.10	0.42	0.15	0.13	0.20	0.40	0.07
Single, new partner * female	-0.32	0.32	0.09	0.10	0.16	0.22	-0.26	0.17	0.38	0.06
Log pseudo-likelihood	-94656.97									
Wald χ^2	28028.02 (df180), $p < .00$									
Pseudo R^2	.16									

Note. Adult child $n = 336,584$. Older male parent $n = 216,611$. Standard errors adjusted for clustering at parent level (216,611 clusters). Bold z-score > 5 , underlined z-score > 4 .

With regard to the model-based estimates, the coefficients in Table 4 are broadly in line with the expectations outlined in Hypotheses 1 to 4, and in all cases other than parental separation (discussed later), we find the patterns to be very similar for both the male and female parent samples. In addition to Table 4, Figure 1 provides predicted probabilities for different migration outcomes according to the geographical configuration of family ties (the top row) and the occurrence of different life events (bottom row). Although the relative magnitude of these associations might at first appear small, it should be noted that they reflect annual probabilities and that the size of these effects would naturally increase if we were to analyze migration over longer periods of time (e.g. 5- or 10-year intervals).

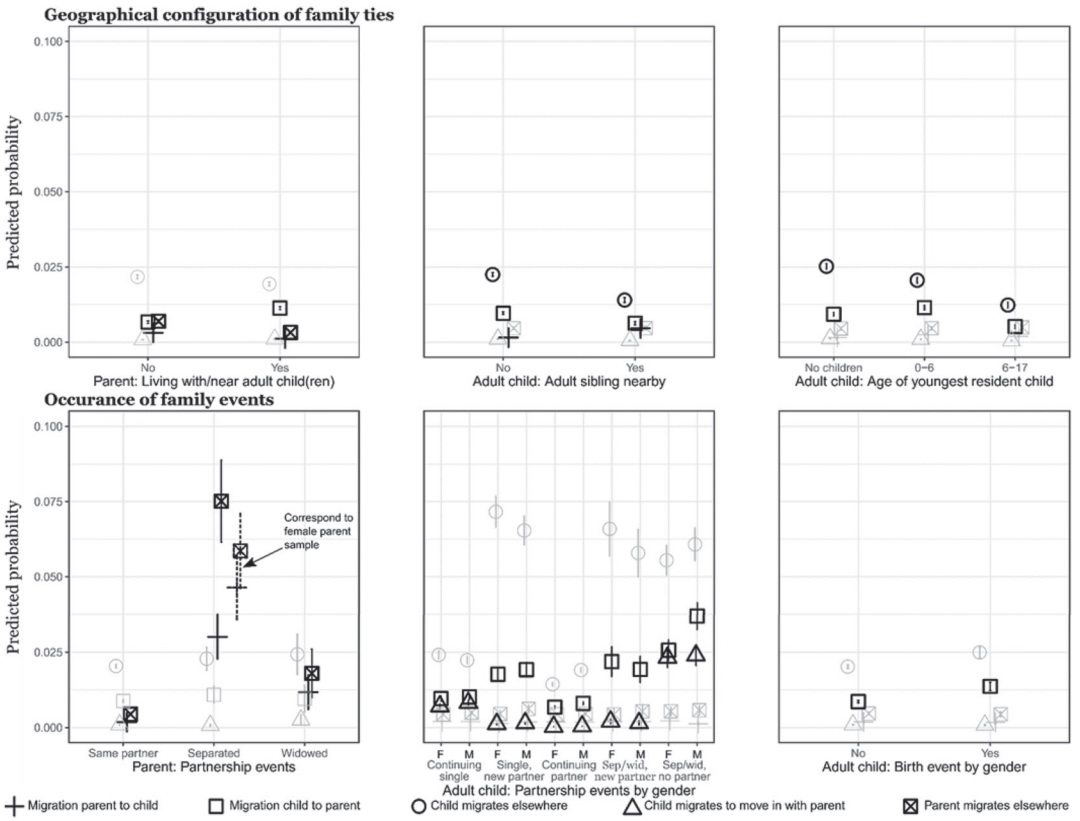
The Estimated Effects of Nonresident Family Ties and Life Events

With regard to Hypothesis 1, we expected that the propensity for older parents to migrate

toward their adult child, and vice versa, would be strengthened when the opportunity for greater interaction between multiple family members existed. In agreement with this hypothesis, we observed a higher propensity to migrate toward a destination when there were multiple family members colocated there. Indeed, the probability for adult children to migrate toward their parent was significantly increased when the older parent was living with/nearby another adult child/sibling (effect on the log-odds of 0.53) (top left, Figure 1), while the probability for older parents to migrate toward the adult child was increased when the adult child was living near another sibling (effect on the log-odds of 1.11) (top center, Figure 1).

The composition of the immediate household appears to hold influence over the relative attractiveness of nonresident family as a destination for migration. For instance, the presence of preschool aged children (0–6 years) was linked to increased propensities for migration toward grandparents (top right, Figure 1). When we look at the estimates in Table 4, we see

FIGURE 1. PREDICTED PROBABILITY OF SELECTED VARIABLES, ESTIMATES, AND 95% CONFIDENCE INTERVALS.



Note. Estimates Based on Male Parent Sample Analysis. Estimates of Interest Are Highlighted in Black, Dashed Estimates Correspond to the Equivalent Female Parent Sample Analysis. *F* = Female Adult Child, *M* = Male Adult Child.

this positive effect on adult children’s migration toward (grand)parents (effect on the log-odds of 0.21) was contrasted by a negative effect on their propensity to migrate toward all other nonfamilial locations (effect on the log-odds of -0.20). Interestingly, previous research suggested that the presence of young grandchildren might increase the propensity for grandparents to migrate toward the adult child (Smits, 2010). From the estimates in Table 4, we observe a small positive effect (effect on log-odds of 0.48), though once translated into probabilities the magnitude of this effect is rather trivial.

Beyond the attraction of distant family members, we hypothesized that the presence of local family ties would reduce propensities to move away (Hypothesis 2). With regard to this, we see for older parents that having adult children living nearby was a considerable deterrent to migration, with all forms of migration by the

parent being extremely rare in this case (top left, Figure 1). The migration deterring effect of local family ties is similarly evident among adult children who had adult siblings living nearby (top center, Figure 1). Meanwhile, from the perspective of the composition of the household, we find the presence of school aged children (6–17 years in Norway) also reduced propensities for all forms of migration among adult children (top right, Figure 1).

Beyond the effects associated with the relative location of nonresident family, migration toward family appears to be closely tied to the emergence of certain key life events (bottom row in Figure 1). Often marking a period in life when needs are acute and resources low, we hypothesized that the loss of a partner would increase propensities for migration toward family (Hypotheses 3a and 3b). Although all forms of migration were increased in the

aftermath of a separation event (bottom left and bottom center, Figure 1), the effect on the multinomial log odds tended to be larger for migration toward family than for migration directed elsewhere (Table 4). In the context of widowhood, an increased likelihood for parents to migrate toward their adult children is also observed, though the estimated effect on the log-odds (1.99) was not as large as that found in the context of separation. This difference may reflect a lower urgency to leave the home after the death of a partner than after separation.

For adult children, we were able to assess the effect of repartnering after the loss of a partner and identify the extent to which it might attenuate the attractiveness of nonresident familial support systems. As we might expect, those who had separated or become widowed and not formed a new co-residential partnership had the highest probabilities of migrating toward or into coresidence with parents (bottom center, Figure 1). For those who did form new partnerships, the propensity to migrate toward family is clearly reduced, while the probability of moving into coresidence with parents is extremely low. It was suggested that gender-based differences in the quality of intergenerational ties, differences in needs, or differences in the ability to maintain the former joint home independently might translate into observable differences between separated men and women in their likelihood of migrating toward family. From this perspective, the estimated effects suggest higher propensities for migration toward adult children among separated mothers than otherwise equivalently separated fathers (see dashed estimates, bottom left, Figure 1). A higher propensity to migrate toward parents was also found among separated female adult children, though this difference disappeared in instances where repartnering occurred (bottom center, Figure 1).

Beyond the effect that the presence of preschool and school-aged children has on migration propensities, birth events were also expected to be associated with increased support needs and increased propensities for migration towards family (Hypothesis 4). Although the estimated association is not as strong as we observed for separation and widowhood events, the birth of a (grand)child was linked to an increased likelihood of migration toward the location of (grand)parents (bottom right, Figure 1).

Variations According to Socio-Demographic Characteristics

Moving beyond the hypothesized effects of family ties and life events, several additional observations can be made. As was noted earlier, lower incomes and access to fewer resources can signal greater support-needs, which could translate into a greater reliance on familial support and thus a greater importance placed on the location of family when deciding if and where to migrate. Interestingly, our estimates tend to run counter to such arguments, with parents from the top income quartile having higher propensities to migrate toward family than those with lower incomes, and adult children with middle incomes tending to have higher propensities to migrate toward family than those with low incomes. Adult children in the top quartile of the household income distribution were also far more likely to migrate into the parental home than those in the middle and lower quartiles, while older parents in the top income quartile were more likely to receive adult children into their home than those in lower income quartiles. Although support-needs may be less acute among wealthier individuals, migration into coresidence may be more common among wealthier families due to their relative ability to offer the necessary space, support, and comfort to make sharing a viable/attractive option. As such, the relationship between resources and support needs appears more complex than we might have first expected.

With regard to educational attainment, we found adult children with high attainments were also more likely to migrate toward their parents than those with lower levels of education, while it is also clear that parents with tertiary (or higher) educations were more likely to have their children migrate toward them than parents with lower levels of education. It is worth noting that the propensity to migrate elsewhere (i.e., toward all other nonfamilial locations) was also higher among the highly educated. It is well known that those with greater financial resources and educational attainments tend to have higher propensities to migrate, and it seems this trend is no different in the case of migration towards family.

From the perspective of occupational status, the patterns fit more closely to the narrative that limited resources translate into greater family reliance. Adult children who received social security (and those classified as "other") were more likely to migrate toward parents (effect on

the log-odds of 0.37), and especially into coresidence (effect on the log-odds of 1.07), than those who were employed. Second-generation immigrants also had higher propensities to migrate into coresidence than those with Norwegian parentage (effect on the log-odds of 0.75), while there is some suggestion that immigrant parents were more likely to migrate toward family than Norwegian native parents (though substantively this difference was small). From the perspective that more central urban locations enable the balancing of a greater range of locational needs (e.g., access to consumer amenities, education and career opportunities, formal childcare/healthcare provision), parents living in rural locations indeed appeared to be less “attractive” to adult children as migration destinations than parents who lived in the more dynamic core regions of Norway.

Of the remaining control variables, being older was typically associated with lower propensities for all forms of migration, with the propensity for the adult child to migrate into coresidence with their parents showing the strongest negative association with age. Meanwhile, as additional markers of a commitment to place, owning one’s home, being employed, and having a longer duration of residence were all shown to lower the propensity to migrate.

DISCUSSION AND CONCLUSIONS

Taking inspiration from Elder’s “linked lives” perspective, the aim of this article was to identify how the propensity and direction of internal migration varies according to the presence and location of intergenerational family networks and the emergence of “linked” life events. Based on our analysis of uniquely detailed geo-coded register data for Norway, the estimated coefficients for nonresident family ties appear larger than many conventional socioeconomic predictors (e.g. income, education, and occupational status) of migration and immobility, a finding underscored by the fact that approximately 40% of all recorded migration events were directed toward familial locations (i.e., within 10 km of a parent/child). If we were to consider the full constellation of other nonbiological, blended, or step-family ties, this share would surely increase. Additional tests revealed the influence of non-resident family on migration to exist independently of the potentially confounding effects of place of birth.

Family ties appear to become especially important at certain junctures in the life course, when needs are high or resources low. Our analysis demonstrated the importance of life events such as separation, widowhood, and childbirth in the promotion of familial support-needs and the attractiveness of intergenerational proximity. Even in the advanced social and welfare settings of Norway, those who experienced such events were far more likely to migrate toward family than those who did not. Although previous qualitative analysis suggested familial reciprocity and obligation might result in individuals migrating to *provide* care, it appears people generally migrate in response to their own life events and to *receive* care.

Although relative needs and access to care will often determine the significance of nonresident family networks, accounting for sociodemographic heterogeneity revealed some additional variations of interest. We found migration toward family to be less common among those with low incomes or low educational attainments. With many Western nations experiencing welfare state retrenchment and a widening of inequalities, differences in the ability of wealthier and less well-off individuals to migrate in search of familial support might be an underappreciated factor working to reinforce socioeconomic disparities. Differences in attachments to, and reliance on, non-resident family might also be relevant for the development and dynamics of broader sociospatial processes too. For instance, although migration and residential mobility are often prescribed as solutions to entrenched social and ethnic-based residential segregation, our analysis revealed higher relative propensities for *return* migration (back to the parental home) among second-generation immigrants than among the Norwegian native population. Examining how family ties might impede migration or “pull back” minorities, poorer people or those with turbulent life courses could be an extremely interesting, policy relevant, avenue for future migration research.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix A Summary Statistics (Means) for Independent Variables (full population sample, without 20 km distance threshold in 2015)

Appendix B Multinomial Regression Model of Migration Propensities (Coefficients Relative to “Neither Migrate”): Female Older Parents.

Appendix C Multinomial Logistic Regression Models of Migration Propensities (Coefficients Relative to “Neither Migrate”): Small Category Outcome Cases Removed.

Appendix D Multinomial Logistic Regression Models of Migration Propensities (Coefficients Relative to “Neither Migrate”): Male Older Parents. Excluding One Outcome at a Time (separate models).

Appendix E Multinomial Logistic Regression Models of Migration Propensities (Coefficients Relative to “Neither Migrate”). Based on Adult Children Not Living in Their Place of Birth and Older Parents Not Living in Adult Child’s Place of Birth (separate models).

Appendix F Summary of Outcome Variable (as % shares) According to Real-Parent and Placebo-Parent Matched Samples.

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